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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/034,670	12/28/2001	Antonio J. Colmenarez	US010641	1814

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EXAMINER

UPRETI, ASHUTOSH

ART UNIT	PAPER NUMBER
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2623

DATE MAILED: 07/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/034,670	Applicant(s) COLMENAREZ ET AL.	
	Examiner Ashutosh Upreti	Art Unit 2623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on May 20, 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2 and 5-16 is/are rejected.
- 7) ☒ Claim(s) 3 and 4 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments and Amendments

Applicant's amendment filed May 20, 2005, has been entered and made of record.

Regarding the objections to claims 2 and 16, in view of applicant's amendments and arguments, the claim objections are withdrawn.

Applicant's arguments filed May 20, 2005, have been fully considered but they are not persuasive.

As to the 35 U.S.C. 102 rejections, the applicant argues that the examiner's statement that "'groups' are considered to be the same as 'states'" is incorrect. The examiner disagrees and points the applicant to the applicant's own summary in the instant application (page 2, lines 31-33) where the applicant discloses that states may be modeled through any number of techniques including clustering. The dictionary definition of 'clustering' is "a grouping of a number of similar things" (see www.dictionary.com).

As to the 35 U.S.C. rejections of claims 7 and 9, the applicant argues that there is no motivation for combining Yoshida (U.S. Patent 6,317,160) with Endo (U.S. Patent Publication 2002/0039203) and that it would require changing the principle of operation of Endo (the primary reference).

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention

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where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, both references deal with obtaining images from a plurality of cameras. As has been previously stated by the examiner, combining Yoshida and Endo would enable the application of image processing techniques in Endo to a greater variety of camera systems, thus providing motivation.

In response to applicant's argument that Yoshida could not be combined with Endo without changing the principle of operation of Endo, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

Although, the rejections mentioned above are still valid the examiner has found additional prior art that was not cited in the previous office action, which will now be used to additionally reject the claims.

Applicant's arguments with respect to claims 5, 10, 12 and 14, have been considered but are moot in view of the new ground(s) of rejection. The examiner acknowledges that the claims were rejected using patents and publications assigned to

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the instant application's assignee. The examiner is therefore using new references to reject the claims.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-6 and 11-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Foote (U.S. Patent 6,751,354).

As to claim 1, Foote discloses matching an input image with one of a plurality of states (Figure 2), the input image determined from a signal comprising images from a plurality of cameras (column 13, line 1-4); and assigning the input image to one of the states when the input image matches the one state (column 7, lines 23-24). Here the classes are considered to be the same as states.

As to claim 2, Foote discloses determining an input image from the signal comprising images from a plurality of cameras (Figure 2 and column 13, line 1-4); and determining input image information from the input image (Figure 2, element 208 and

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column 6, lines 64-65 – here video features are a form of image information); the step of matching further comprises the step of comparing the input image information with state image information corresponding to each of at least one states (column 7, lines 14-15); and the step of assigning further comprises the step of assigning the input image to one of the states when the input image information matches state image information of the one state (column 7, lines 19-21).

As to claim 5, Foote discloses there being a plurality of states (column 7, lines 2-4) and the step of performing training to determine the plurality of states (column 2, lines 40-41).

As to claim 6, Foote discloses outputting the input image, the input image output as being associated with its state (Figures 30 and 34 and Column 23, lines 26-28 and Column 35, lines 41-46).

As to claim 11, Foote discloses that the input image information matches state image information of the one state when a metric comparing the input image information and the state image information of the one state falls within a predetermined value (column 23, lines 20-21). In this case feature vectors are being compared with information gathered from training images and a threshold is used for comparing. A threshold must be set before something is compared to it, meaning that it must be predetermined.

As to claim 12, Foote discloses the step of determining input image information from the input image comprises the step of determining a histogram from the input image (column 26 lines 47-49); the step of comparing comprises the step of comparing

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the histogram of the input image with histograms corresponding to each of at least one states; and the step of assigning comprises the step of assigning the input image to one of the states when the histogram of the input image matches the histogram of the one state within a predetermined error (Column 26, lines 49-52. In addition see claim 11 for discussion on predetermined thresholds/error etc.).

As to claim 13, the limitations of the claim are rejected for the same reasons as given in the rejection of claim 2. Note that the Foote discloses features, plural, implying a plurality of features. Predetermined threshold/error is discussed in the claim 11 rejection.

As to claim 14, Foote discloses states that are states of a Hidden Markov Model (column 7, lines 16-18).

As to claims 15 and 16, Foote discloses the use of memory and a computer system (Figure 1) for carrying out image classification methods. The use of software is inherent on a computer implementing a method. The other limitations are rejected for the same reasons as in claims 1 and 2.

Claims 1, 2, 6, 11, 13, 15 and 16 are rejected under 35 U.S.C. 102(e) as being anticipated by Endo (U.S. Patent Application 2002/0039203 A1).

As to claim 1, Endo discloses matching an input image with one of a plurality of states (paragraph 0117, lines 5-7). Here the image is classified into a group depending on which physical location the image was originally taken in. There is a plurality of groups (paragraph 0099, line 4 mentions "groups" as opposed to "group") and "groups"

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are considered to be the same as "states". The above sections of Endo describe an invention that is present on a digital camera. Endo does however state that it can be applied to a personal computer, which is not part of a camera (paragraph 0151, lines 7-10). Endo also discloses that when in this form, the input image is from a signal (paragraph 0158, lines 3-4, if electronically transmitting, it must be a signal) with images from a plurality of digital cameras (paragraph 0158, lines 9-10). Endo discloses assigning an input image to a group if that image matches the requirements of belonging to that group. This is disclosed by the use of thresholds to determine which group an image belongs to (paragraph 0099, lines 1-4).

As to claim 2, Endo discloses determining input information from the input image (paragraph 0117, lines 5-7). Here the images are classified into groups based on position information (a form of input information), after that information has been stored with each image (paragraph 0117 lines 2-3). Endo also discloses comparing input image information with state image information corresponding to each state (paragraph 0099 lines 1-4). Here it shows that each group only accepts images from certain locations. This means that location information from the image must be compared to locations information of the group. Endo discloses classifying (or assigning) the input images to a group when the input image information matches the group image information of that group (paragraph 0099, lines 1-4, see discussion above).

As to claim 6, Endo discloses outputting an input image in a manner that shows what group it belongs to (paragraph 0159, lines 3-4).

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As to claim 11, Endo discloses the use of a predetermined ("fixed") threshold for determining if an image belongs to a group (paragraph 0099, lines 1-4).

As to claim 13, Endo discloses determining a plurality of features from the input image (Figure 7 – here several types of locations information are associated with each image). Since the image is compared to other groups in terms of location (see claim 2), it follows that a plurality of information is being compared between the input image and the groups (i.e. latitude, longitude etc.). Regarding the limitations about assigning the image to a state and using thresholds, the limitations are rejected for the same reasons as in claims 2 and 1 respectively.

As to claim 15, Endo discloses using a personal computer (paragraph 0157, line 2), which inherently must have a processor and memory with readable code for it to work. The other limitations are rejected for the same reasons as in claims 1 and 2.

As to claim 16, Endo discloses using a personal computer to implement steps of the method (paragraph 0157, line 2). The use of software is inherent on a computer implementing a method. The other limitations are rejected for the same reasons as in claims 1 and 2.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Foote in view of Yoshida (U.S. Patent 6,317,160).

As to claim 7, Foote as applied above does not expressly disclose that the images on the input signal are asynchronous. Yoshida discloses images on input signals being asynchronous (column 4, line 24).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use the image processing techniques in Foote to process the asynchronous images in Yoshida, as they both deal with images obtained from a plurality of cameras.

One would have been motivated to do this, as it would enable the methods to be applied to a greater variety of camera systems.

As to claim 8, Foote does not expressly disclose multiplexing images onto a signal where the sequence of cameras from which the images are coming is not predetermined. Yoshida discloses multiplexing images onto a signal (Figure 1, 11) and further discloses that these images are in an asynchronous state (Column 6, lines 66-67) and does not state that the sequence of cameras is known. In addition to this, an identification signal is used to identify which camera an image came from (column 3, lines 13-16). These pieces of information together, further imply, that the sequence of cameras is unknown.

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use the image processing techniques in Foote to process

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images that are input from a signal containing images from a plurality of cameras, of unknown sequence, as in Yoshida, as they both deal with images obtained from a plurality of cameras.

One would have been motivated to do this, as it would enable the methods to be applied to system where the camera sequence is unknown, hence resulting in applicability to a greater number of systems.

As to claim 9, Foote as applied above does not expressly disclose that the signals on the input signal are synchronous. Yoshida discloses images on input signals being synchronous (column 6, line 67 to column 7, line 2).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use the image processing techniques in Foote to process the synchronous images in Yoshida, as they both deal with images obtained from a plurality of cameras.

One would have been motivated to do this, as it would make processing easier as more is known about a synchronous image signal prior to processing than an asynchronous signal.

Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Endo as applied to claims 1 and 2 above, and further in view of Yoshida (U.S. Patent 6,317,160).

As to claim 7, Endo as applied above does not expressly disclose that the images on the input signal are asynchronous. Yoshida discloses images on input signals being asynchronous (column 4, line 24).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use the image processing techniques in Endo to process the asynchronous images in Yoshida, as they both deal with images obtained from a plurality of cameras.

One would have been motivated to do this, as input images from multiple camera systems are often asynchronous (Yoshida, column 1, lines 19-21) meaning the methods could be applied to a greater variety of camera systems.

As to claim 8, Endo does not expressly disclose multiplexing images onto a signal where the sequence of cameras from which the images are coming is not predetermined. Yoshida discloses multiplexing images onto a signal (Figure 1, 11) and further discloses that these images are in an asynchronous state (Column 6, lines 66-67) and does not state that the sequence of cameras is known. In addition to this, an identification signal is used to identify which camera an image came from (column 3, lines 13-16). These pieces of information together, further imply, that the sequence of cameras is unknown.

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use the image processing techniques in Endo to process images that are input from a signal containing images from a plurality of cameras, of

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unknown sequence, as in Yoshida, as they both deal with images obtained from a plurality of cameras.

One would have been motivated to do this, as it would lower the price of the device by reducing the memory requirements (Yoshida, column 1, lines 44-46).

As to claim 9, Endo as applied above does not expressly disclose that the signals on the input signal are synchronous. Yoshida discloses images on input signals being synchronous (column 6, line 67 to column 7, line 2).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use the image processing techniques in Endo to process the synchronous images in Yoshida, as they both deal with images obtained from a plurality of cameras.

One would have been motivated to do this, as it would reduce the inconvenience of dealing with asynchronous signals (Yoshida column 1, lines 20-23), making processing easier.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Foote in view of Kuno (U.S. Patent 5,243,418).

Foote as applied above discloses outputting the input image, the step of outputting associating the input image with the one state (Figures 30 and 34 and Column 23, lines 26-28 and Column 35, lines 41-46).

Foote as applied above does not expressly disclose determining if an event is occurring on the input image, the step of determining comparing previous images associated with the one state with a present image.

Kuno discloses determining if an event is occurring on the input image, the step of determining comparing previous images associated with the one state with a present image (column 6, lines 60-67).

It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to determine if an event was occurring in an image as is done in Kuno, when processing image in Foote, as they both involve processing video image frames. Doing so, would enable the classifying methods to be used more effectively in applications like classifying security system video feeds (i.e. group images showing an intrusion together for easy access by security personnel), thus providing motivation.

Allowable Subject Matter

Claims 3, and 4 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

As to claim 3, the limitation regarding determining if at least one state exists is not expressly disclosed in the prior art.

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As to Claim 4, the limitation regarding adding a new state that corresponds to the input image when the input image information doesn't match any state, is not expressly disclosed in the prior art.

Contact Details

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ashutosh Upreti whose telephone number is (571) 272-7428. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au can be reached on (571) 272-7414. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A.U.

AU
July 18, 2005

JINGGEWU
PRIMARY EXAMINER

